

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A method comprising:

in a first processor of a first functional module of a medical device, generating a handshake signal;

providing the handshake signal to a watchdog timer software process in a second processor of a second functional module of the medical device, wherein the watchdog timer software process corresponds to a watchdog timer hardware unit; and

receiving a reset signal from ~~causing~~ the second processor to reset the first processor when the handshake signal is not provided to the watchdog timer software process within a prescribed time interval.

Claim 2 (Original): The method of claim 1, further comprising resetting the first processor when the handshake signal is provided before a minimum time or after a maximum time.

Claim 3 (Original): The method of claim 1, further comprising disabling therapy output hardware when the handshake signal is not provided within the prescribed time interval.

Claim 4 (Original): The method of claim 1, further comprising detecting an abnormal power condition and disabling therapy output hardware in response to the abnormal power condition.

Claim 5 (Original): The method of claim 1, further comprising detecting a voltage of the medical device.

Claim 6 (Original): The method of claim 5, further comprising selectively disabling therapy output hardware as a function of the detected voltage.

Claim 7 (Original): The method of claim 1, wherein the medical device comprises at least one of a therapy control module, a system controller, a user interface module, and a patient parameters module.

Claim 8 (Original): The method of claim 7, wherein the user interface module is communicatively coupled to at least one of a keyboard, a display screen, and a strip chart recorder.

Claim 9 (Original): The method of claim 7, wherein the patient parameters module is configured to obtain at least one of ECG information, vital sign measurements, non-invasive blood pressure (NIBP) measurements, and SpO₂ information from a patient.

Claim 10 (Original): The method of claim 1, wherein the medical device is an automated external defibrillator.

Claim 11 (Currently Amended): A processor-readable medium containing processor-executable instructions for:

in a first processor of a first functional module of a medical device, generating a handshake signal;

providing the handshake signal to a watchdog timer software process in a second processor of the medical device, wherein the watchdog timer software process corresponds to a watchdog timer hardware unit; and

receiving a reset signal from ~~causing~~ the second processor to reset the first processor when the handshake signal is not provided to the watchdog timer software process within a prescribed time interval.

Claim 12 (Original): The processor-readable medium of claim 11, further containing instructions for resetting the first processor when the handshake signal is provided before a minimum time or after a maximum time.

Claim 13 (Original): The processor-readable medium of claim 11, further containing instructions for disabling therapy output hardware when the handshake signal is not provided within the prescribed time interval.

Claim 14 (Original): The processor-readable medium of claim 11, further containing instructions for detecting an abnormal power condition and disabling therapy output hardware in response to the abnormal power condition.

Claim 15 (Original): The processor-readable medium of claim 11, further containing instructions for detecting a voltage of the medical device.

Claim 16 (Original): The processor-readable medium of claim 15, further containing instructions for selectively disabling therapy output hardware as a function of the detected voltage.

Claim 17 (Original): The processor-readable medium of claim 11, wherein the medical device comprises at least one of a therapy control module, a system controller, a user interface module, and a patient parameters module.

Claim 18 (Original): The processor-readable medium of claim 17, wherein the user interface module is communicatively coupled to at least one of a keyboard, a display screen, and a strip chart recorder.

Claim 19 (Original): The processor-readable medium of claim 17, wherein the patient parameters module is configured to obtain at least one of ECG information, vital sign measurements, non-invasive blood pressure (NIBP) measurements, and SpO₂ information from a patient.

Claim 20 (Original): The processor-readable medium of claim 11, wherein the medical device is an automated external defibrillator.

Claim 21 (Currently Amended): A medical device comprising:

a watchdog timer hardware unit;

a first functional module comprising a first embedded processor configured to generate a handshake signal; and

a second functional module comprising a second embedded processor with a watchdog timer software process corresponding to the watchdog timer hardware unit configured to receive the handshake signal and to reset the first embedded processor when the handshake signal is not provided within a prescribed time interval.

Claim 22 (Currently Amended): The medical device of claim 21, wherein the watchdog timer hardware unit ~~at least one of the first and second functional modules~~ comprises a windowed watchdog timer hardware unit.

Claim 23 (Original): The medical device of claim 21, wherein at least one of the first and second embedded processors is configured to reset when the handshake signal is provided before a minimum time or after a maximum time.

Claim 24 (Original): The medical device of claim 21, further comprising therapy output hardware, wherein at least one of the first and second embedded processors is configured to disable the therapy output hardware when the handshake signal is not provided within the prescribed time interval.

Claim 25 (Original): The medical device of claim 21, further comprising a voltage monitor configured to detect an abnormal power condition and to disable therapy output hardware in response to the abnormal power condition.

Claim 26 (Original): The medical device of claim 25, wherein the voltage monitor is further configured to detect a voltage of the medical device.

Claim 27 (Original): The medical device of claim 26, wherein the voltage monitor is further configured to selectively disable therapy output hardware as a function of the detected voltage.

Claim 28 (Original): The medical device of claim 21, wherein the medical device comprises at least one of a therapy control module, a system controller, a user interface module, and a patient parameters module.

Claim 29 (Original): The medical device of claim 28, wherein the user interface module is communicatively coupled to at least one of a keyboard, a display screen, and a strip chart recorder.

Claim 30 (Original): The medical device of claim 28, wherein the patient parameters module is configured to obtain at least one of ECG information, vital sign measurements, non-invasive blood pressure (NIBP) measurements, and SpO₂ information from a patient.

Claim 31 (Original): The medical device of claim 21, wherein the medical device is an automated external defibrillator.

Claim 32 (New): The medical device of claim 21, wherein the second functional module comprises the watchdog timer hardware unit.

Claim 33 (New): The medical device of claim 21, further comprising a third functional module including a third embedded processor configured to generate another handshake signal, wherein the first embedded processor includes another watchdog timer software process to receive the another handshake signal and to reset the third embedded processor when the handshake signal is not provided within a prescribed time interval.

Claim 34 (New): The medical device of claim 21, further comprising a third functional module including a third embedded processor configured to generate another handshake signal, wherein the watchdog timer software process in the second embedded processor receives the another handshake signal and resets the third embedded processor when the another handshake signal is not provided within a prescribed time interval.

Claim 35 (New): The medical device of claim 21, wherein the second embedded processor is configured to generate another handshake signal and the watchdog timer software process receives the another handshake signal and resets the second embedded processor when the another handshake signal is not provided within a prescribed time interval.

Claim 36 (New): The method of claim 1, further comprising:
generating another handshake signal in a third processor;
providing the another handshake signal to another watchdog timer software process included in the first processor, wherein the another watchdog timer software process corresponds to the watchdog timer hardware unit; and
receiving a reset signal from the first processor to reset the third processor when the another handshake signal is not provided to the another watchdog timer software process within a prescribed time interval.

Claim 37 (New): The method of claim 1, further comprising:

- generating another handshake signal in a third processor;
- providing the another handshake signal to the watchdog timer software process included in the second processor; and
- receiving a reset signal from the second processor to reset the third processor when the another handshake signal is not provided to the watchdog timer software process within a prescribed time interval.

Claim 38 (New): The method of claim 1, further comprising:

- generating another handshake signal in the second processor;
- providing the another handshake signal to the watchdog timer; and
- receiving a reset signal from the watchdog timer to reset the second processor when the another handshake signal is not provided to the watchdog timer within a prescribed time interval.

Claim 39 (New): The processor-readable medium of claim 11, further containing instructions for:

- generating another handshake signal in a third processor;
- providing the another handshake signal to another watchdog timer software process included in the first processor, wherein the another watchdog timer software process corresponds to the watchdog timer; and
- receiving a reset signal from the first processor to reset the third processor when the another handshake signal is not provided to the another watchdog timer software process within a prescribed time interval.

Claim 40 (New): The processor-readable medium of claim 11, further containing instructions for:

- generating another handshake signal in a third processor;
- providing the another handshake signal to the watchdog timer software process included in the second processor; and

- receiving a reset signal from the second processor to reset the third processor when the another handshake signal is not provided to the watchdog timer software process within a prescribed time interval.

Claim 41 (New): The processor-readable medium of claim 11, further containing instructions for:

- generating another handshake signal in the second processor;
- providing the another handshake signal to the watchdog timer; and
- receiving a reset signal from the watchdog timer to reset the second processor when the another handshake signal is not provided to the watchdog timer within a prescribed time interval.

Claim 42 (New): An external defibrillator comprising:

- a therapy control module to control delivery of defibrillation shocks to a patient, the therapy control module including a first processor that generates a first handshake signal and a watchdog timer hardware unit that resets the first processor when the first handshake signal is not generated within a first time interval specified by the first watchdog timer hardware unit; and

- a system control module including a second processor to generate a second handshake signal,

- wherein the therapy control module includes a watchdog timer software process on the first processor to reset the first processor when the second handshake signal is not generated within the first time interval.

Claim 43 (New): The defibrillator of claim 42, wherein the system control module includes a second watchdog timer hardware unit to reset the second processor when the second handshake signal is not generated within a second time interval.

Claim 44 (New): The defibrillator of claim 42, wherein the first watchdog timer hardware unit is a windowed watchdog timer hardware unit.

Claim 45 (New): The defibrillator of claim 42, further comprising:

a user interface module to control input and output of information for an operator, the user interface module including a third processor that generates a third handshake signal, wherein the system control module includes a second watchdog timer software process corresponding to the second watchdog timer hardware unit, the second watchdog timer software process resetting the third processor when the third handshake signal is not generated within the second time interval.

Claim 46 (New): The defibrillator of claim 42, further comprising:

a patient parameters module to process one or more physiological parameters of the patient, the patient parameters module including a third processor that generates a third handshake signal, wherein the system control module includes a second watchdog timer software process corresponding to the second watchdog timer hardware unit, the second watchdog timer software process resetting the third processor when the third handshake signal is not generated within the second time interval.

Claim 47 (New): An external defibrillator comprising:

three or more functional hardware modules;
at least one watchdog timer hardware unit; and
a watchdog timer software process running on at least one of the modules to reset at least one of the other hardware modules when the respective hardware module fails to provide a handshake signal within a time interval specified by the watchdog timer hardware unit.

Claim 48 (New): The defibrillator of claim 47, wherein the hardware modules includes a therapy control module to control delivery of defibrillation shocks to a patient, a system control module, and a patient parameters module to process one or more physiological parameters obtained from the patient.